

### **III. REMARKS**

#### **A. Introduction**

This invention generally relates to multi-polarization active array transmit antennas. In particular, the application claims a chip comprising phase shifters that control the scan angle, linear polarization, and circular polarization of an RF signal.

#### **B. Rejection of Claims 10-11 Under 35 U.S.C. § 112 Second Paragraph As Being Indefinite**

The Examiner rejected claims 10-11 under 35 U.S.C. § 112, second paragraph, for being indefinite. The Examiner states that it is not understood what is meant by “chip is using multifunctional self-aligned gate process” in claim 10.

Applicant has cancelled claim 11 without waiver or disclaimer to obviate the indefiniteness rejection.

Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. MPEP §2173.05. The Applicant submits that amended claim 10 is not indefinite.

Amended claim 10 recites a chip “using a multifunction self-aligned gate process.” The meaning of a chip “using a multifunction self-aligned gate process” is apparent from the prior art. MPEP § 2753.05(a). *See* U.S. Patent No. 5,093,667 to Andricos, which discloses a “C-band transmit-receive module for an active aperture radar...employing gallium arsenide chips preferably manufactured by the Multifunction Self-Aligned Gate process;” *see also* Bahl, et al., “GaAs IC’s Fabricated with the High-Performance, High-Yield Multifunction Self-Aligned Gate Process for Radar and EW Applications.” Thus,

Applicant respectfully submits that amended claim 10 overcomes the Examiner's rejection and accordingly requests that the rejection be withdrawn.

**C. Rejection of Claims 1, 2, 6-9, 11, and 22-24 Under 35 U.S.C. § 102(b) as anticipated by Fassett**

The Examiner rejected claims 1, 2, 6-9, 11, and 22-24 Under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,088,970 to Fassett et. al. ("Fassett"). It is well established that in order to anticipate a claim, a reference must disclose every element of the claim either expressly or inherently. Claim 1 recites a transmitter chip comprising, inter alia, phase shifters to control both the scan angle and linear polarization of an RF signal and a means for controlling said phase shifters. Fassett discloses a combination phase shifter/polarization switch. See Fassett, Figure 4.

The Examiner contends that Fassett's phase bits 110 and 112 disclose a phase shifter for controlling scan angle. However, there is nothing in Fassett that indicates that phase bits 110 and 112 control scan angle. As understood by the ordinary artisan, "scan angle" refers to the angle through which a device or output continually changes direction, as in the fixed angle through which a cyclical radar transmission sweeps. There is no suggestion that Fassett's polarization switch 18a (Figure 1 and Figure 4) provides this feature. Instead, in the tables at columns 8-10 Fassett only describes selectable polarization senses without any reference to scan angle. Similarly, Fassett fails to disclose a means for controlling phase shifters that control scan angle. Thus, Fassett does not expressly anticipate claim 1.

Claims 2, 6-9, 11 depend from claim 1 and thus incorporate all the features of claim 1. Because Fassett does not anticipate claim 1, Fassett similarly fails to anticipate claims 2, 6-9, 11, and 22-24.

Similarly, claim 22 and dependent claims 23 and 24 recite a means for controlling a scan angle. For the reasons described above for claim 1, Fassett does not teach a means for controlling a scan angle.

Thus, Applicant respectfully submits that the rejection of claims 1, 2, 6-9, 11, and 22-24 is improper and should be withdrawn.

**C. Rejection of Claims 3-5 and 10 Under 35 U.S.C. § 103(a) as unpatentable over Fassett**

The Examiner rejected claims 3-5 and 10 Under 35 U.S.C. § 103(a) as unpatentable over Fassett.

Applicant acknowledges that Fassett does not teach all the features of claims 3-5 and 10, such as a 5.625 degrees phase shifter, an attenuator and amplifiers, and the use of transistor-transistor logic (TTL) to control polarization and scan angle. However, Applicant does not agree that such features, as they are recited in the claims, are either “obvious design characteristics” or “conventional and do not represent any novelty in the art of antenna array control.” Applicant requests the provision of a supporting reference per MPEP § 2144.03.

Even if various claim elements were obvious in light of Fassett, Fassett is an improper primary reference for a rejection under 35 U.S.C. § 103(a). For the reasons described above, Fassett fails to teach the elements of claim 1, and thus Fassett fails to teach claims 3-5 and 10 which depend from claim 1.


## **VI. Conclusion**

Applicant respectfully submits that the application is in condition for allowance and respectfully requests a notice of allowance for the pending claims. Should the Examiner determine that any further action is necessary to place this application in condition for allowance, the Examiner is kindly requested and encouraged to telephone Applicant's undersigned representative at the number listed below.

This response to the Office Action is being filed before the expiration of three (3) months from the date of the Office Action. Therefore, it is believed that no extension fees are required. If any additional fees are deemed necessary, such as for extra claims, Applicant hereby provides authorization to charge such fees against deposit account 50-0206. If any refunds are due, Applicant hereby provides authorization to credit such refunds against the deposit account.

Respectfully submitted,

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